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PATENT: 06357P USA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLI-
CATION OF : Garg, et al.
SERIAL NO. : 10/820,864 : GRP. ART UNIT: 1762
FILED : April 9, 2004 : EXAMINER:
FOR : Diffusion Barrier Layers and Methods Comprising for Depositing
Metal Films by CVD or ALD Processes

Commissioner for Patents
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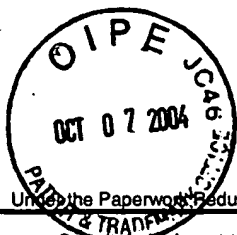
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UNDER 37 C.F.R. 1.97(b)**

The Information Disclosure Statement submitted herewith is being filed within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d); within three months of date of entry into the national stage as set forth in § 1.491 in an international application; before the mailing date of a first Office action on the merits; or before the mailing of a first Office action after the filing of a request for continued examination under § 1.114.

Respectfully submitted,

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PTO/SB/08A (08-03)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	10/820,864
				Filing Date	April 9, 2004
				First Named Inventor	Garg, et al.
				Art Unit	1762
Sheet	1	of	2	Examiner Name	
				Attorney Docket Number	06357P USA

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 5,521,120	05-28-1996	Nulman, et al.	
		US- 6,423,201 B1	07-23-2002	Mandrekar	
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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
		60258471	12-20-1985	Shiotani Yoshimi	(Abstract)	
		WO 00/71550 A1	11-30-2000	Xu, et al.		
		EP 1 142 894 A2	10-10-2001	Morman, et al.		
		EP 1 029 943 A1	08-23-2000	Harada		
		EP 0 818 559 A2	01-14-1998	Danek, et al.		

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Complete if Known		
			Application Number	10/820,864	
			Filing Date	April 4, 2004	
			First Named Inventor	Garg, et al.	
			Art Unit	1762	
Examiner Name					
Sheet	2	of	2	Attorney Docket Number	06357P USA

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		MARCADAL, C., et al., "CVD Process for Copper Interconnection", Microelectronic Engineering 37/38 (1997), pp. 97-103	
		JOSWIG, H., et al., "Improved Performance of Tin-Diffusion Barriers After a Post-Treatment", VMIC Conference, June 12-13, 1990, p. 477	
		WANG, M. T., et al., "Barrier Properties of Very Thin Ta and TaN Layers Against Copper Diffusion", J. Electrochem. Soc., Vol. 145, No. 7, July 1998, pp. 2538-2545	
		ZHANG, JIMING, et al., "CVD Cu Process Development and Integration for Sub-0.18 μ m Devices", Mt. Res. Soc. Symp. Proc., Vol. 564, 1999, pp 243-249	
		JAIN A., et al. "Process Development, Film Characterization, and Integration of PECVD W ₂ N as a Diffusion Barrier for Copper Interconnect", SANDHU, GURTEJ S., "Advanced Metallization Conference in 1998 (AMC 1998), Materials Research Society, pp. 305-311	

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